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second input torque estimating unit for estimating an input-torque of said automatic transmission using torque-converter characteristic;

selecting unit for comparing the ratio between turbine revolution speed and engine revolution speed (N_t/N_e) and a threshold value, selecting one of the estimated values from the first input-torque estimating unit and the second input-torque estimating unit in accordance with the comparison result, and outputting the estimated value selected as an estimated torque value, and

control unit for controlling the automatic transmission using the estimated torque value outputted from the selecting unit.

13. Control system for an automatic transmission with torque converter comprising:

first input torque estimating unit for estimating an input-torque of said automatic transmission using an engine torque characteristic;

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second input torque estimating unit for estimating an input-torque of said automatic transmission using torque-converter characteristic;

selecting unit for comparing the ratio between turbine revolution speed and engine revolution speed (N_t/N_e) and a threshold value, selecting the estimated value from the first input-torque estimating unit when the ratio (N_t/N_e) is not smaller than the threshold and selecting the estimated value from the second input-torque estimating unit when the ratio (N_t/N_e) is less than the threshold, and outputting the estimated value selected as an estimated torque value; and

control unit for controlling the automatic transmission using the estimated torque value from the selecting unit.

14. Control system for an automatic transmission with torque converter comprising:

first input torque estimating unit for estimating an input-torque converter comprising:

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second input torque estimating unit for estimating an input-torque of said automatic transmission using an engine torque characteristic;

storing unit for comparing the ratio between turbine revolution speed and engine revolution speed (N_t/N_e) and a threshold value, and memorizing a deviation of the estimated values from the first input-torque estimating unit and the second input-torque estimating unit when the ratio (N_t/N_e) is less than the threshold;

calculation unit for comparing the ratio between turbine revolution speed and engine revolution speed (N_t/N_e) and a threshold value, and calculating an estimated torque by correcting the estimated value from the first input-torque estimating unit using the calculated deviation when the ratio (N_t/N_e) is not smaller than the threshold; and

control unit for controlling the automatic transmission using the estimated torque value from the selecting unit.--